PRC Environmental Management, Inc.
233 North Michigan Avenue
Suite 1621
Chicago, IL 60601
312-856-8700
Fax 312-938-0118

PRC

PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

AKZO CHEMICALS, INC.
McCOOK, ILLINOIS

ILD 057 833 642

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

Work Assignment No.	:	R05032
EPA Region	:	5
Site No.	:	ILD 057 833 642
Date Prepared	:	November 27, 1991
Contract No.	:	68-W9-0006
PRC No.	:	109R05032IL40
Prepared by	:	B&V Waste Science & Technology Corp. Stephen Mehay
Telephone No.	:	(312)346-3775
Contractor Project Manager	:	Shin Ahn
Telephone No.	:	(312) 856-8700
EPA Work Assignment Manager	:	Kevin Pierard
Telephone No.	:	(312) 886-4448

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5. B&V Waste Science & Technology Corp. (BVWST) was contracted by PRC to conduct the PA/VSI for the Akzo Chemicals, Inc. facility.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, waste water treatment units, and other units that EPA has generally exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading-unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release to the environment of hazardous waste or constituents has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where such a release in the future is judged to be a strong possibility.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility.
- Obtain information on the operational history of the facility.
- Obtain information on releases from any units at the facility.
- Identify data gaps and other informational needs to be filled during the VSI.

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA.
- Identify releases not discovered during the PA.
- Provide a specific description of the environmental setting.
- Provide information on release pathways and the potential for releases to each medium.
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases.

The VSI includes interviewing appropriate facility staff, inspecting the entire facility to identify all SWMUs and AOCs, photographing all SWMUs, identifying evidence of releases, initially identifying potential sampling locations, and obtaining all information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Akzo Chemicals, Inc. facility in McCook, Illinois. The PA was completed on August 7, 1991. BVWST gathered and reviewed information from Illinois Environmental Protection Agency (IEPA) and from EPA Region 5 RCRA files. The VSI was conducted on August 9, 1991. It included interviews with Akzo Chemicals, Inc. facility representatives and a walk-through inspection of the facility. Eight SWMUs and no AOCs were identified at the facility.

The VSI is summarized and 12 inspection photographs are included in Attachment A. Field notes from the VSI are included in Attachment B.

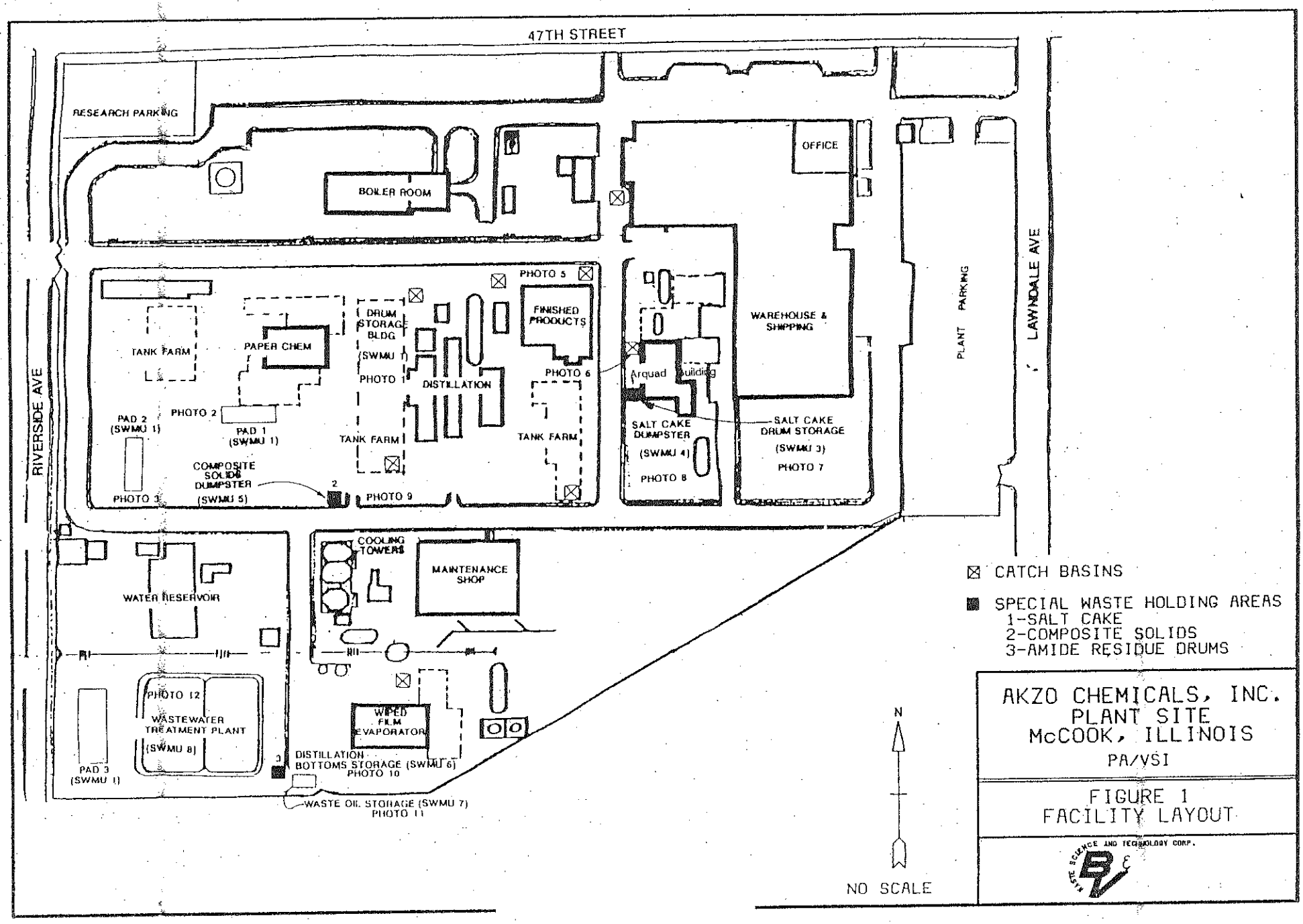
47TH STREET
RESEARCH PARKING
BOILER ROOM
OFFICE
PLANT PARKING
LAWNDALE AVE
RIVERSIDE AVE
TANK FARM
PAPER CHEM
DRUM STORAGE BLDG (SWMU 1)
PHOTO 1
DISTILLATION
PHOTO 5
FINISHED PRODUCTS
PHOTO 6
WAREHOUSE & SHIPPING
Arquad Building
PAD 2 (SWMU 1)
PHOTO 2
PAD 1 (SWMU 1)
TANK FARM
TANK FARM
SALT CAKE DUMPSTER (SWMU 4)
PHOTO 8
SALT CAKE DRUM STORAGE (SWMU 3)
PHOTO 7
COMPOSITE SOLIDS DUMPSTER (SWMU 5)
PHOTO 3
PHOTO 9
COOLING TOWERS
MAINTENANCE SHOP
WATER RESERVOIR
PHOTO 12
WASTEWATER TREATMENT PLANT (SWMU 8)
WIPED FILM EVAPORATOR
PAD 3 (SWMU 1)
DISTILLATION BOTTOMS STORAGE (SWMU 6) PHOTO 10
WASTE OIL STORAGE (SWMU 7) PHOTO 11
CATCH BASINS
SPECIAL WASTE HOLDING AREAS
1-SALT CAKE
2-COMPOSITE SOLIDS
3-AMIDE RESIDUE DRUMS
N
NO SCALE
AKZO CHEMICALS, INC.
PLANT SITE
McCOOK, ILLINOIS
PA/VSI
FIGURE 1
FACILITY LAYOUT
WASTE SCIENCE AND TECHNOLOGY CORP.

TABLE 2

SOLID WASTES

Waste/EPA Waste Code	Source	Primary Management Unit(s)
Salt Cake	Amine Production	3, 4
Waste Water Runoff Spills Water	Amine Production	2, 8
Composite Fatty Acids Amides and Amines	Overfill packaging/truck spillage during production, Lab QC analysis	5
Distillation Bottoms	Distillation of Fatty Acids	6
Waste Oil	Lubrication and Hydraulic Oil	7
Mercury Acetate (D009)*	Laboratory	1

Note:

* Akzo stopped generating this waste stream in 1982.

Akzo has operated at its current location since 1949 and currently employees about 110 people. The facility has a large distillation area where raw fatty acids and nitrogen derivatives are distilled into intermediates and products. The intermediates may go through one of numerous reactions before a final product is produced. The products this facility produces include amides, quaternary amines, amine oxides, ethoxylated amines, and amineacetates. The facility has a maintenance shop for equipment repair. The facility also has three large above ground tank farms. The tanks hold raw materials, intermediates, reagents, and products. Solid wastes are managed in containers, drums, and dumpsters at several locations throughout the facility. Waste waters are treated in a waste water treatment plant before discharge to the sanitary sewer.

2.3 WASTE GENERATING PROCESSES

No hazardous wastes are currently generated at the Akzo facility. The Quality Control (QC) laboratory produced 2-3 drums per month of mercury acetate (D009) waste from 1949 until June 2, 1982, when it was all transported offsite. From 1949 to 1980 the waste mercury acetate was discharged to the metropolitan sanitary district sewer. The mercury waste acetate was stored in drums in Building 33 (SWMU #1) from 1980 till June 2, 1982. Since then the QC Laboratory changed their analytical techniques so no mercury acetate is generated. They replaced the mercury acetate with iodine monochloride in acetic acid.

The facility currently generates three IEPA defined special wastes (Table 2). The first is the salt cakes. Approximately 20 cubic yards are generated every 2 to 3 months during purification of quaternary amine. The salt cake contains table salt (NaCl) and some wasted amines. It is collected in drums and stored in the collection area (SWMU #3). It is then dumped in a dedicated salt cake dumpster (SWMU #4). The dumpster is hauled to Land and Lakes Landfill number 3 in Chicago, Illinois.

The facility produces another 20 cubic yards every 2 to 3 months of what they term composite solids, which are placed in a dumpster for disposal (SWMU #5). The solids consist of quality control analysis waste, collected in a small satellite accumulation container, wasted product, overfill of packaging/truck spillage, other spills not diverted to the catch basins, often including gravel from the yard. The accumulation of the slick fatty material from spills is a safety concern at the plant. The spilled product can accumulate dirt and grime and gum up machinery. The dumpster is disposed of at Land and Lakes Landfill number 3 in Chicago, Illinois.

The third special waste is a distillation bottom from the production of amides in the wiped film evaporator. The distillation bottom contains a mix of long chain fatty acids and amides, which have no product value. The bottom is collected warm from the distillation column in drums. It cools to a solid and

is stored on the distillation bottoms storage pad (SWMU #6) until taken offsite to Beecher Sexton Landfill on Goodenow Road in Beecher, Illinois.

A small amount of waste lubrication and hydraulic oil is generated by the machinery on the facility. It is collected in a drum behind the machine shop. When full, the drum is placed on the waste oil drum storage pad (SWMU #7) until taken offsite to another Akzo facility for fuel blending.

Production water and surface water runoff from the production, packaging, and shipping areas are collected by the drainage system. Both collect in catch basins (SWMU #2) located throughout the facility. The fat material separates from the water and rises to the top of the basin. It is scraped from the top of the basin and hauled to another Akzo facility approximately once a week for fuel blending. The water goes to the waste water treatment plant (WWTP) (SWMU #8) where aerobic degradation of the organic material occurs.

The effluent is released to the municipal sanitary sewer. None of the facility's sanitary sewage is processed by the WWTP. The top of the basin is capped with sheet metal for odor control. The fumes are vented through a water fume scrubber before being released. Some of the water from the scrubber is released to the sanitary sewer while the rest is returned to the headworks of the plant.

2.4 REGULATORY HISTORY

Akzo Chemicals Inc. currently does not routinely generate RCRA hazardous waste. The facility maintains that no hazardous waste has been on site since June 1982. No evidence of hazardous waste was seen during this inspection.

The facility submitted its first RCRA Part A application as a TSD and Generator in August 1980 (EPA, 1980). This application listed process codes for container storage (S01) of 13,000 pounds per year, D009, as well as D001, U002, U003, U009, U103, U115, U154, U122, U171, U147, and P100 wastes. In March 1981 this list was reduced to only D009; the other materials are all raw materials (EPA, 1980).

On August 7, 1985 IEPA approved a closure plan for building 33 and the three drum storage pads (SWMU #1). The plan was implemented during 1985 and 1986. Closure of the storage areas was approved January 1987 by IEPA (IEPA, 1987).

The facility has an air permit from IEPA for a particulate bagging devise (IEPA, 1983). During packaging of flaked fatty acids, fatty amines and fatty amides, some of the flakes escape to the air. The bag is used to collect the flakes. They are then returned to the product when the bag is cleaned. The facility also has an operating permit for their waste water treatment plant.

4.0 AREAS OF CONCERN

No areas of concern on the Akzo facility were observed during this site inspection.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified eight SWMUs and no AOCs at the Akzo Chemicals facility. Background information on the facility's location, operations, waste generating processes, release history, regulatory history, environmental setting, and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, release history, and observed condition, is discussed in Section 3.0. AOCs are discussed in Section 4.0. Following are BVWST's conclusions and recommendations for each SWMU. Table 3 identifies the SWMUs at the Akzo Chemicals facility and suggested further actions.

SWMU 1 **Storage Building and Pads**

Conclusions: These units underwent formal closure proceeding in 1985 and 1986. Testing was done and no evidence of release was found. There is no potential for release from these units to groundwater, surface water, air and onsite soils.

Recommendations: No further actions are suggested, because no wastes are stored on this unit and formal closure has already occurred.

SWMU 2 **Catch Basins**

Conclusions: There is no potential for release to air because of the nature of the material. There is a low potential for release to the groundwater, surface water and onsite soils. The production, packaging and shipping areas are all sloped toward the catch basin drains and surrounded by berms.

Recommendations: No further actions are suggested.

SWMU 3 **Salt Cake Drum Storage Area**

Conclusions: There is a low potential for release to the air, onsite soils, groundwater or surface water. The salt cakes are solid and contain sodium chloride (NaCl, table salt) and quaternary amines. Any spills would be contained on the dock.

Recommendations: No further actions are suggested.

SWMU 4 **Salt Cake Dumpster**

Conclusions: There is no potential for release to the air because the material is a solid. There is a low potential for a release to occur to the surface water, onsite soils, and eventually to the groundwater. The potential for release is dependant on the integrity of the dumpster and the amount of precipitation which falls on it.

Recommendations: No further actions are suggested. The material is primarily table salt and therefore poses no environmental threat. The quaternary ammonium compounds are also environmentally benign and pose no threat.

SWMU 5 **Composite Solids Dumpster**

Conclusions: There is no potential for air release from this unit because of the nature of the material. There is a low potential for a release to occur to the surface water, and onsite soils. The potential for release is dependent on the integrity of the unit and the amount of precipitation which falls on it.

Recommendations: No further actions are suggested.

SWMU 6 **Distillation Bottoms Storage Area**

Conclusions: There is no potential for air release from this unit because the material is a solid. There is a low potential for a release to occur to the surface water, onsite soils or groundwater. The distillation bottom is a solid wax-like material which would be easily captured if spilled.

Recommendations: No further actions are suggested.

SWMU 7 **Waste Oil Drum Storage Area**

Conclusions: There is a moderate potential for a release to onsite soils. There is a low potential for a surface water, groundwater, and air release from this unit. There is no secondary containment for the storage area. There is rarely more than one drum of waste oil on the pad at any time.

Recommendations: Because of the small volume of oil handled on the storage area, no further actions are recommended.

SWMU 8 **Waste Water Treatment Plant**

Conclusions: There is no potential for an air release because of the odor recovery system. The potential for a release to onsite soils, groundwater, or surface water is low because of adequate secondary containment.

Recommendations: No further actions are suggested.

CORRECTIVE ACTION STABILIZATION QUESTIONNAIRE

Completed by: Mary Wojciechowski
Date: March 12, 1992

Background Facility Information

Facility Name: Akzo Chemicals, Inc.
EPA Identification No.: ILD 057 833 642
Location (City, State): McCook, Illinois
Facility Priority Rank: Low

1. Is this checklist being completed for one solid waste management unit (SWMU), several SWMUs, or the entire facility? Explain.

Entire facility - 8 SWMUs

Status of Corrective Action Activities at the Facility

2. What is the current status of HSWA corrective action activities at the facility?

( ) No corrective action activities initiated (Go to 5)
(X) RCRA Facility Assessment (RFA) or equivalent completed
( ) RCRA Facility Investigation (RFI) underway
( ) RFI completed
( ) Corrective Measures Study (CMS) completed
( ) Corrective Measures Implementation (CMI) begun or completed
( ) Interim Measures begun or completed

3. If corrective action activities have been initiated, are they being carried out under a permit or an enforcement order?

( ) Operating permit
( ) Post-closure permit
( ) Enforcement order
(X) Other (Explain)

No actions are underway.

4. Have interim measures, if required or completed [see Question 2], been successful in preventing the further spread of contamination at the facility?

( ) Yes 0 for the USTs
( ) No
( ) Uncertain; still underway - for the RCRA unit
(X) Not required

Additional explanatory notes:

There is no evidence to support the existence or threat of contamination at the facility.

14. Are appropriate stabilization technologies available to prevent the further spread of contamination, based on contaminant characteristics and the facility's environmental setting? [See Attachment A for a listing of potential stabilization technologies.]

( ) Yes; Indicate possible course of action.

(X) No; Indicate why stabilization technologies are not appropriate; then go to Question 18.

There is no evidence to support the existence or threat of contamination at this facility.

15. Has the RFI, or another environmental investigation, provided the site characterization and waste release data needed to design and implement a stabilization activity?

( ) Yes
( ) No

If No, can these data be obtained faster than the data needed to implement the final corrective measures?

( ) Yes
( ) No

Timing and Other Procedural Issues Associated with Stabilization

16. Can stabilization activities be implemented more quickly than the final corrective measures?

( ) Yes
( ) No
( ) Uncertain

Additional explanatory notes:

17. Can stabilization activities be incorporated into the final corrective measures at some point in the future?

( ) Yes
( ) No
( ) Uncertain

Additional explanatory notes:

Conclusion

18. Is this facility an appropriate candidate for stabilization activities?

( ) Yes
( ) No, not feasible
(X) No, not required

Explain final decision, using additional sheets if necessary.

There is no evidence to support the existence or threat of contamination at this facility.